

Original Research Article

A study on knowledge and vaccination status of Hepatitis B among medical students

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Abstract

Introduction: Hepatitis B is an acute systemic infection caused by Hepatitis B Virus (HBV), affecting the liver and transmitted usually by parenteral route. Health Care Professionals, particularly surgeons, laboratory personnel, medical students are at high risk of exposure to HBV by virtue of their contact with patients, contaminated instruments and body fluids. Since proper vaccination can prevent this infection, complete vaccination against HBV is necessary for medical and paramedical students. This study was conducted to assess the knowledge and Hepatitis B vaccination status among medical students of Katari Medical College, Guntur, Andhra Pradesh. **Methods:** A cross sectional study was conducted among medical students belonging to III – IX semesters using a pre tested questionnaire. Data was analysed using SPSS version 16.0. **Results:** Among the study participants 95.5% are having awareness that HBV affects liver, but only 46.5% know all the possible modes of transmission of the disease. Only 63% of the participants are vaccinated against HBV; of which only 67.5% are fully vaccinated. **Conclusion:** Awareness regarding modes of transmission of HBV is low. Periodical sensitization programmes and vaccination are essential for protecting medical students from HBV infection.

Keywords: Awareness, Hepatitis B, Vaccination,

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Introduction

Hepatitis is an inflammatory disease of the liver which may be caused by the Hepatitis B virus (HBV). Hepatitis B is a global problem, with 66% of all the world population living in areas where there are high levels of infection¹. In South East Asian Region, there are estimated 80 million HBV carriers (about 6% of the total population).² India has the intermediate endemicity of hepatitis B, with hepatitis B surface antigen prevalence between 2% and 10% among the population studied. The total number of HBV carriers in India has been estimated to be over 40 million which constitutes nearly 12-15% of entire HBV carrier pool in the world. HBV is also the second most common cause for acute hepatitis in India (after hepatitis E), being responsible for

nearly one-third of acute viral hepatitis patients.³

The practice of modern medicine has “contributed” a lot in the increase of the cases and spreading the disease in the society. Hepatitis B infections are common due to lapse in the sterilization technique of instruments or due to the improper hospital waste management as 10 to 20% health care waste is regarded hazardous and it may create variety of health risk.⁴ Healthcare workers, particularly surgeons, pathologists, dentists and physicians working in hemodialysis and oncology units, are at a higher risk of contracting HBV infection via minor skin cuts and accidental needle punctures.⁵

Healthcare personnel represent a high risk population for HBV infection. Hepatitis B is the

most important infectious occupational hazard which Indian medical students and healthcare workers (HCWs) encounter. The factors responsible for the high risk of being infected by HBV are the high prevalence of HBV carriers in the population and the high contagiousness of HBV. In fact, HBV infection is more dangerous compared to HIV infection vis-a-vis occupational exposure is due to the fact that its transmission rate after percutaneous exposure to blood is much higher (about 30%) than that of HIV (0.3%).⁶

Knowledge regarding the Hepatitis B virus and safety precautions is needed to minimize the health care settings acquired infections among health personnel. They should have complete knowledge of Hepatitis B infections, importance of vaccinations and practice of simple hygienic measures apart from that of specific protective measures. Medical students being part of the health care delivery system are exposed to the risk when they come in contact with patients and contaminated instruments. They are the first level of contact between patients and medical care. They are expected to undertake activities related to patient care with the beginning of their clinical years.⁷

Since proper vaccination can prevent HBV infection, complete hepatitis B vaccination is necessary for medical and paramedical students.⁸ The present study was carried out to find the knowledge, attitude and practice of medical students towards hepatitis B infection and vaccination.

Material and methods

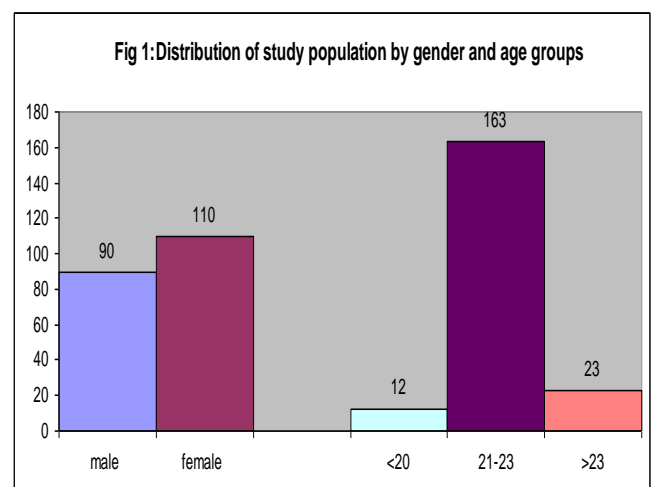
The present study was conducted to assess the knowledge, attitude, awareness and practices regarding HBV infection and vaccination. This is a cross sectional institution based study carried out among 200 medical students of III to IX semesters in Katuri Medical College and Hospital, Guntur. Students in their 1st year of medical course were not included in the study.

Permission was taken from the Institutional Ethics Committee for conducting the study.

Students were approached in their lecture halls and verbal consent was taken. A pre tested and pre designed questionnaire was distributed which was collected after it had been completed. Information was collected regarding epidemiology of HBV infection, modes of spread, attitude towards HBV infected patients, immunization status etc. The questionnaires were distributed in a single day in order to avoid sharing of information. Data was analysed using SPSS version 16.

Results

The information was collected from a total of 200 medical students belonging to III to IX semesters. Out of these 55% were females and 45% males. The median age of study participants was 21 ± 1.3 years. Majority of them (82.5%) were in the age group of 20- 22 years. (Fig1)



In the present study 89% of the students knew that HBV infection was more contagious than HIV infection through blood borne route.

Among the medical students who participated in the study, only 46.5% were aware of all the modes of transmission of HBV infection (Table 1) and 33.5% felt that health care personnel were high risk group for acquiring HBV infection. Availability of Post Exposure

Prophylaxis for HBV infection was known to 63.3% of males and 65.4% of females among the study participants.

Table-2 describes the attitude of the medical students towards the hepatitis B patients. Nearly two-thirds (73.5%) of the students believed that a hepatitis patient should be allowed to work routinely and 82.5% of the students correctly indicated that the hepatitis patients should not be isolated. In the present study, 36% of the respondents were not aware of the fact that hepatitis patients should not be allowed sexual contact.

Table 1. Knowledge regarding modes of transmission of HBV infection

Modes of transmission known	Number (%)
Three	93 (46.5)
Two	31 (15.5)
Only 1	51(25.5)

Table 2. Attitude of medical students regarding Hepatitis B infection

Question	Male (%)	Female (%)	Total (%)	p value
Should Hepatitis patients be allowed to work routinely? YES	59 (65.6)	88 (80.0)	147 (73.5)	0.02
Should Hepatitis patients be isolated? NO	69 (76.7)	96 (87.3)	165 (82.5)	0.05
Should Hepatitis patients abandon sexual contact? YES	59 (65.6)	69 (62.7)	128 (64.0)	0.67

To answer the question, 'How can students be encouraged to get vaccinated?' multiple responses were given, out of which 59% of the respondents advocated organizing periodic campaigns, and 44.5% media awareness programmes. Majority of the students, i.e 89.5%

had not participated in any awareness programme for Hepatitis B and 76 % said that they have not been for screened for HBV infection.

Regarding vaccination status 63% of the students reported that they were vaccinated for hepatitis B and out of these only 67.5% were completely vaccinated (3 doses). The proportion of male and female students completely vaccinated with three doses of hepatitis B vaccine was 41.1% and 43.6% respectively. Only 24% of the students in the present study reported that they were screened for HBV infection.

Discussion

Hepatitis B is a worldwide public health problem. The disease is transmitted by parenteral / blood borne, vertical and sexual routes. In the present study 46.5% of the medical students were aware of all the three modes of transmission of HBV infection. The most common route of transmission of HBV infection known was blood borne (80.5%), followed by sexual route (61%) and vertical transmission (54.5%). The knowledge levels reported in the present study are lesser than that reported in studies done elsewhere in India.^{7,9} In a study¹⁰ done among medical students of Karachi, Pakistan only 57.1% of the participants showed excellent knowledge regarding the route of transmission of HBV infection.

Hepatitis B is an important infectious occupational disease for medical students and health care workers.¹¹ In the present study only 33.5% of the medical students perceived health care personnel to be high risk group for HBV infection.

Lack of awareness about disease transmission and its consequences, high chances of being exposed to blood and body fluids due to their inexperience in doing invasive procedures and handling patients, lack of perception to be at high risk for contracting HBV infection and not

adhering to universal precautions can result in the risk of being exposed to blood borne pathogens like HBV to be higher among medical students than an average health care worker.⁶

In the present study, availability of Post Exposure Prophylaxis for HBV infection was known to 64.5% of the medical students. This is higher than that reported in a study¹⁰ done in Karachi, Pakistan where 76% of participants did not have any knowledge regarding Post Exposure Prophylaxis for HBV infection.

About 73.5% of the respondents correctly indicated that the patients should be allowed to work routinely and 82.5% indicated that HBV infected individuals should not be isolated. Similar findings have been reported in a study¹⁰ done in Karachi, Pakistan and these attitudes are encouraging as compared to Omani medical students who showed only 58%.¹²

However, the attitude is distressing regarding avoidance of sexual contact in HBV infected individuals as 36% of the students were unaware of this fact in the present study.

Vaccination Status among medical students

Immunization with hepatitis B vaccine plays a very important role in controlling occurrence of HBV infection. Among the study participants only 42.5% are fully vaccinated with all the three doses against HBV infection. Similar findings were reported among medical students of Lahore and in a study conducted in Bombay.¹³ However in the present study, vaccination status of medical students was much lower than the vaccination rate of 80% in medical students, highlighted by a similar study conducted in Orissa, India¹⁴ and in a study¹⁰ conducted in Karachi, Pakistan where the fully vaccinated rate was 70.6%.

Conclusions

The present study concludes that there is lack of awareness among the medical students about

Hepatitis B, and its mode of transmission and regarding high risk groups for HBV infection. Moreover, many of the students were not vaccinated against Hepatitis B, which made them more vulnerable to the disease.

Since medical students are at increased risk of acquiring needle stick injury, and increased prevalence rate of Hepatitis B in India, medical students should be routinely vaccinated upon entry into the medical college. Complete vaccination and health education of all medical students upon entry into medical colleges followed by periodical sensitization campaigns and seminars would go a long way in protecting them from the disease.

Conflict of Interest: nil

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References

1. Park J.E., Park K, *Text Book of Preventive and Social Medicine*, 21st Edition, M.S. Banarsidas Bhanot, Jabalpur; 2011: 192.
2. Malik A.H., Lee W.M. *Chronic Hepatitis B Virus Infection. Treatment Strategies for the next Millenium. Annals of Internal medicine* May 2000; Volume 132 (9):723-31
3. Aggarwal R. *Universal neonatal hepatitis B virus vaccination in India: Why? Hep B Annual* 2004;1:60-71
4. N. Taneja, M. Biswal .*Safe disposal of infectious waste, Indian perspective Journal of Hospital Infection* Volume 62; 4: 525-26.
5. Daw MA, Siala IM, Warfalli MM, Muftah MI. *Seroepidemiology of hepatitis B virus markers among hospital health care workers- Analysis of certain potential risk factors. Saudi Med J.* 2000;21:1157-60.
6. Chouhan S. *Hepatitis B prophylaxis practice among medical students : An overview. Hep B Annual* 2008;5:102-16
7. Singh A, Jain S. *Prevention of Hepatitis B; knowledge and practices among Medical students. Healthline* 2011; 2 (2):8-11.
8. Vinodhkumaradithyaa A, Srinivasan M, Sankarasubramanian RA, Uma A, Ananthalakshmi I, Thirumalaikolundusubramanian P, et al. *Hepatitis B*

vaccination among medical students. *Ind J Com Med* 2008; 33: 67-68.

9. Chhabra P, Grover VL, Agarwal K, Do our medical students have enough knowledge of Hepatitis B? A Delhi based study, *J Commun Dis* 2002 Sept; 34 (3) : 221-5.

10. Khan N, Ahmed SM, Khalid MM, Siddiqui SH, Merchant AA. Effect of gender and age on the knowledge, attitude and practice regarding hepatitis B and C and vaccination status of hepatitis B among medical students of Karachi, Pakistan. *J Pak Med Assoc.* 2010;60:450-5

11. Singh S P , Swain M , Kar IB . HBV and Indian medical and dental students. *Hep B Annual* 2004;1:229-39.

12. Al-Jabri AA, Al-Adawi S, Al-Abri JH, Al-Dhahry SH. Awareness of hepatitis B

virus among undergraduate medical and non-medical students. *Saudi Med J* 2004; 25: 484-7.

13. Biju IK, Sattar A, Kate M, etal Incidence and awareness of hepatitis B infection among and paramedical students. *Indian J Gastroenterol* 2002; 21 (1) 104-5.

14. Singh et al. Hepatitis B vaccination among medical college: results of a survey .*Indian J Gastroenterol* 2000; 19(2):A33-4.